




ISM Busan & Ulsan

# Report





# Table of Contents

<b>BUSAN INTERNATIONAL FINANCE CENTER (BIFC)</b>	3
Introduction	4
Busan Financial Hub's Strategy	6
Goals of Busan Financial Hub	6
Direction for Busan Financial Hub	9
Incentives - Foreign Financial Organizations	8
Group Reflection	9
SHipping Finance: Busan as Asia's Marine Financial Hub	10
Reflection	12
 <b>PUSAN NEWPORT INTERNATIONAL TERMINAL (PNIT)</b>	 13
Introduction	14
Company Strategy	15
SWOT Analysis	16
Recommendations	17
Reflections	17
 <b>BUSAN PORT AUTHORITY</b>	 18
Introduction	19
North Port & New Port	20
SWOT Analysis	21
Ulsan	22
The UPA's Vision and Strategic Goal	23
Reflections	25
 <b>BUSAN PORT AUTHORITY</b>	 26
Introduction	27
SWOT Analysis	29
Recommendation	30
Group Reflection	30
 <b>ULSAN NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY (UNIST)</b>	 31
Introduction	32
Group Reflection	33





# BUSAN INTERNATIONAL FINANCE CENTER (BIFC)

## INTRODUCTION

Busan was designated as a financial hub along with Seoul in January 2009. This designation formed part of the plan to develop Busan into a world-class financial hub, focusing on maritime and derivatives finance.

Busan Financial Hub provides central financial support to the southern economy, in addition to complementing Seoul’s integrated financial hub. The designation of Busan as a financial hub has benefited the fields of administration, finance, and accounting, and has therefore promoted the development of financial expertise, along with the relocation of financial institutions to Busan.

### A Strategic Place for Global Logistics

With its strategic location, Busan is increasingly growing in importance to global logistics. When the North Pole Route—a shortcut that connects Europe to Asia—is developed in 2030, the distances from Busan to Europe and from Busan to North America will be reduced by 40% and 30%, respectively. Busan will also be the key starting point of the future Silk Road Express (SRX), a railway that will connect Busan with Europe through China and Russia, enabling Busan to grow from a logistics city in Northeastern Asia to the mecca of world logistics.

### Hub of Marine Logistics in Northeast Asia

Busan Port, the fifth largest container port in the world as of 2014 and the largest in South Korea, is a super port that processes more than 17 million twenty-foot equivalent units of containers annually. Within South Korea, it processes 75% of container cargoes that enter or exit the country.

Trading with about 500 ports in 100 countries all over the world, Busan plans to build its global presence as a world-class port and logistics hub in Northeastern Asia by opening 45 berths at the Busan New Port until 2020, and by minimising lead time through the construction of a logistics center equipped with cutting-edge systems in the hinterland of Busan.



## VISION

**No.1 Financial Hub City in the Northeast Asia  
Specialized in Maritime & Derivatives Finance**



## GOAL

**Ship Finance : Market Share 0.12% ('09) → 3% ('20)**  
**Financial Derivatives : Ranked 1st in the World (exchange trading)**  
**: Ranked 3rd in Northeast Asia (til 2020)**



## PROMOTIONAL DIRECTION

- Step by step Development (Northeast Asia Market → World Market)
- Competitive Reinforcement (Ship finance, Derivatives Finance, Back-office/Back-up Center)
- Infrastructure Establishment (Complex/Facility, System/Environment, Training expert)
- Improvement of Financial Hub image
- Direct Establishment of Financial Organization & Related Service Company
- Formation of Business Cluster with Shipping Industry

### Busan Financial Hub's Strategy

Busan aims to be a specialised financial hub for maritime and derivatives finance and a back-office/back-up centre. It works on achieving this through a maximum utilisation of Busan's advantages, taking into consideration foreign and domestic environmental changes, along with the political dynamics of financial hubs. These advantages include:

- Specialised shipping finance focusing on the Northeast Asian port logistics hub and shipping companies
- Specialised derivatives finance focusing on the Korea Exchange (KRX)
- Specialisation in back-office/back-up centres that prove to be more cost-effective than those in Seoul

### Goals of Busan Financial Hub

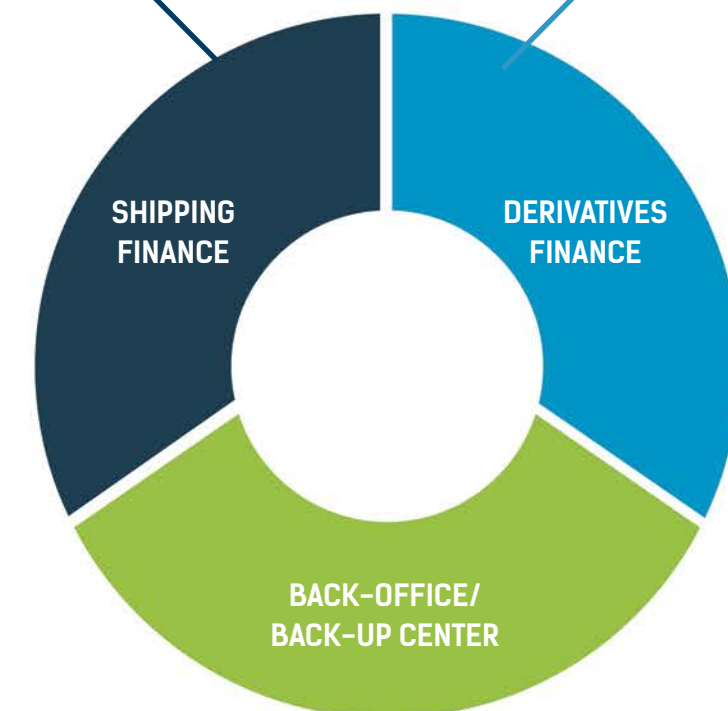
#### SHIPPING FINANCE

Global Market Share 3%

Asia Market Share 12%

#### DERIVATIVES FINANCE

Maintenance of rankings as world's no. 1 in transaction on exchange and as Northeast Asian market's no. 3 in off-board transactions



#### BACK-OFFICE/BACK-UP CENTER

Attracting financial back-office subsidiary companies, call centers, and remote back-up centers of major financial organisations including banks, securities firms, and insurance companies.



Direction for Promoting Busan Financial Hub

- Establishment of general matters required of financial hubs
- Ensuring competitiveness in shipping finance, derivatives finance, and back-office/back-up centres
- Reinforcement of Busan’s image to build its reputation as a financial hub
- Step-by-step regional approach: Northeast Asian market -> International market

Main Tasks

- 01

Establishment of Base & Strengthening Busan Financial Hub

  - Establishment of Busan International Finance Center
  - Establishment of Busan International Finance Training Institute & Financial Graduate School
  - Enactment and revision of related legislations and ordinances
- 02

Development of Maritime (ship, shipping) Finance

  - Attracting ship finance departments of Major Korean financial companies to Busan
  - Establishment of institutions specialising in shipping finance
  - Setting up and attracting shipping operation companies
- 03

Cultivation of Devirative (new growth) Finance

  - Establishing carbon Emission Trading Exchange
  - Establishment and operation of a Derivative R&D Center
  - Establishment of OTC Derivative CCP
- 04

Growing a Back-Office & Back-up Center

  - Establishment of Back-up Center and IT Center
  - Establishment of a foundation to hold global outsourcing centers for back-office work
- 05

Attracting Foreign & Domestic Financial Companies

  - Attracting financial organisations specialising in marine and derivatives
  - Establishment of international financial organizations

Incentives – Foreign Financial Organizations

TYPES	TARGETS	DESCRIPTION			
		ESTABLISHMENT OF HQ REGIONAL HQ	ESTABLISHMENT OF BRANCH	RELOCATION OF HQ/ REGIONAL HQ WITHIN KOREA	RELOCATION BRANCH WITHIN KOREA
		OVERSEAS > BUSAN		OTHER PLACE > BUSAN	
Corporate Tax <sup>1/</sup> Income Tax <sup>1</sup>	Financial Institution with an investment of over 2 billion won and more than 10 regular workers	100% tax exemption for 3 years from the first tax year when the first income is made, 50% for the next two years		Not applicable	
Property Tax <sup>2</sup>		100% tax exemption for 3 years from the first tax year when tax liability is formed		Not applicable	
AcquisitionTax <sup>3</sup>		100% tax exemption for acquired property within 15 years from establishment date of business		Not applicable	
Entrance Subsidy <sup>4</sup>	Financial Institution which establishes Regional Headquarters managing more than 3 countries, or headquarters	Up to 50% of the expenses to purchase land or buildings or rent (Up to 5 Billion won per institution)	Not applicable	Up to 50% of the expenses to purchase land or buildings or rent (Up to 5 Billion won per institution)	Not applicable
Employment Subsidy <sup>4</sup>	Financial Institution with more than 10 regular workers for the last 3 months	Up to 600,000 won per new employee after movement to BIFC (for up to 6 months, up to 200 million won per institution)			
Education/ Training Subsidy <sup>4</sup>	Financial Institution with training for more than 1 month to recruit more than 10 Korean employees	Up to 600,000 won for education/training per new employee after movement to BIFC (for up to 6 months, up to 200 million won per institution)			
Business Facility Installation Subsidy <sup>4</sup>	Financial Institution with more than 10 regular Korean employees	Up to 105 of the expenses required for installation of business facilities (up to 1 billion Won per institution)			

Applicable Act

1) 21 of Article 121 of the Restriction of Special Taxation Act and 26 of Article 116 of the enforcement ordinance

2) 1 of Article 7 of Busan Metropolitan City Nam-gu Tax Exemption Ordinance (according to clause 3, 21 of Article 121 of the Restriction of Special Taxation Act )

3) 2 of Article 12 of Busan Metropolitan City Tax Exemption Ordinance (according to clause 3, 21 of Article 121 of the Restriction of Special Taxation Act )

4) Ordinance of the Busan Metropolitan City Financial Industry Cultivation (Articles 5,6,7,8, 12)



# GROUP REFLECTION

After meeting with the Busan International Finance Center (BIFC) management, our team noted that the BIFC tenancy largely comprises local Korean corporations. The absence of foreign trading houses and financiers indicates that there is a difficulty in establishing an international financial hub, which is essential for the BIFC to engage in the international arena.

The BIFC attributes the delay in its progress mainly to the global financial crisis in 2008. Due to the poor global economic climate, particularly in commodities markets, most international corporations have scaled back on expansion plans. Hence, the BIFC has had little success in attracting major international financiers thus far.

Looking ahead, the BIFC plans to focus on attracting foreign corporations. It can also consider extending its financial services to the energy and shipbuilding industries in Ulsan, even though Busan is largely considered a container port and a manufacturing hub. This would give the BIFC access to more markets and increase Busan’s attractiveness as an international financial centre.

Sources:

- Busan international financial city promotion center. (n.d.). Retrieved August 15, 2016, from <http://www.bifc.kr/eng/main/main.asp>
- Welcome to Busan. (n.d.). Retrieved August 15, 2016, from [http://www.investkorea.org/busan\\_en/index.do](http://www.investkorea.org/busan_en/index.do)

## Shipping Finance: Busan as Asia’s Marine Finance Hub

### Marine Finance Center (MFC)

Busan has long served as a central port and is home to many global shipbuilders. Its geopolitical significance is no less than that of its global peers, such as the ports of Hamburg, Oslo, and Piraeus. Globally, Busan Harbor is ranked fifth largest in cargo volume, and half of South Korea’s major shipyards and 82% of shipbuilding equipment companies are concentrated in Busan and its neighbouring Gyeongnam Province, making Busan a key location for maritime trade.

Tapping Busan’s strong suits, the Korean government established the Marine Finance Center (MFC) in 2014. The MFC integrates ship financing-related divisions from the Export-Import Bank of Korea (KEXIM), Korea Trade Insurance Corporation (K-Sure), and Korea Development Bank (KDB), with an aim to provide a one-stop marine financial consulting centre. The MFC has offshore plant and ship-related financial responsibilities, supports small- and medium-sized shipbuilders and shipping companies, and carries out research and development activities on ship financing. With three divisions, five departments and 13 teams, the MFC is staffed with 77 specialists from KEXIM, K-Sure, and KDB.



Structure of Korea’s Marine Finance Center (MFC)

### Korean Shipping Finance Industry

Financing volumes in the Korean shipping industry have decreased dramatically since the 2008 global financial crisis. From 500 annual shipbuilding deals in 2007, the number has fallen to 200 deals annually. Despite this downward market trend, the Korean government remains keen on developing Busan as Asia’s marine finance centre due to two main reasons.

Firstly, there is a strong inflow of ship finance into Asia. Since the 2008 global financial crisis, decreased lending appetite among European banks and strengthened shipbuilding activity across Asia have prompted regional banks to increase commitments to shipping finance. While only one Asian institution made it to the top 40 players lending to global shipping in 2008, more than nine Asian banks had entered the top 40 rankings by 2013.

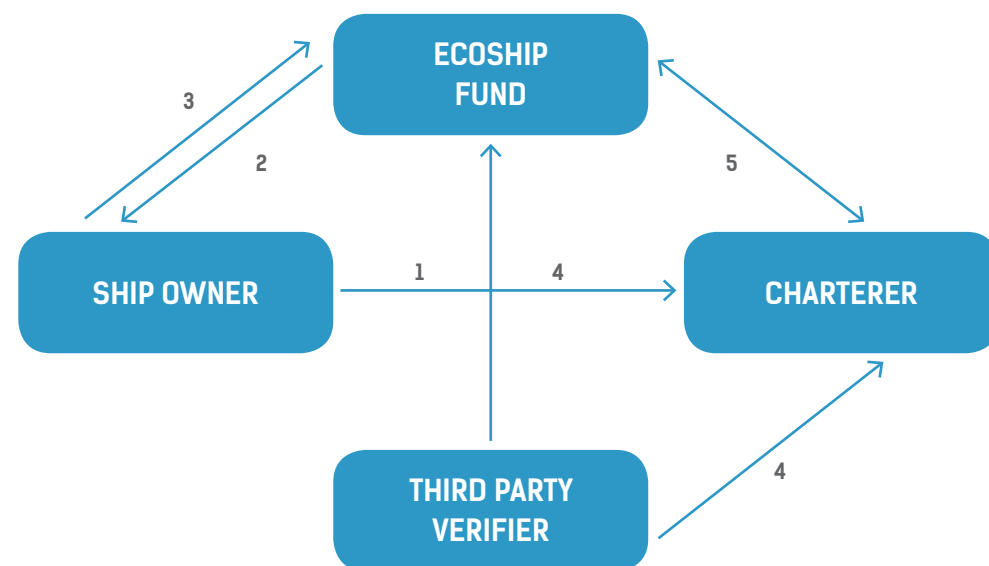
Secondly, the market has evolved to use various financial structures. Shipbuilders are increasingly using high-yield bonds and private equity funds in place of traditional syndicated debt financing to fund their projects. Bond issuances and private equity funds have multiplied more than five times the volume of new ship financing deals since 2008. With the growing demand for innovative financial structures, the Korean government sees a need for a shipping finance hub to provide advanced financial structures, and Busan was chosen for its geographical and structural advantages.

### Korean Government's Strategy

As the MFC is publicly owned, the Korean government has enacted legislations and revised policy projections to enhance Busan's potential to become Asia's marine finance hub, laying out the following strategies since the MFC's inception in 2014.

Firstly, the government aimed to improve the regulatory and business environments to encourage global players to actively engage in business activities amid well-developed infrastructure.

Secondly, the government has initiated advanced financial schemes to revitalise the marine industry. Given the depressed market sentiments, it was difficult to finance new ships. As such, the Korean government set up a "marine guarantee agency", a public-private partnership between private investors and financial policy institutions to support traditional debt financing and facilitate various structured finance projects. The government has also promoted equity investments in "ecoship funds", with MFC participants committing to incrementally increase their financial support.



1. Ship owner and charterer sign a charter contract
2. EcoShip lends the owner to install an energy-saving technologies and provide owner a cash flow in the lifetime of the technology that guarantees a 12% IRR
3. The owner pays back the loan in the lifetime of the technology
4. An independent third party verifies annual fuel consumption and the value of fuel savings
5. The charterer and EcoShip split the fuel saving

Structure of an EcoShip Fund

Thirdly, the government has helped facilitate Busan's recognition as a maritime financial hub. After considering Busan's geographical and industrial advantages, the government relocated the MFC, marine guarantee agency, and ship operators to the BIFC to centralise the main shipping businesses in Busan, with the aim of creating synergy. This has allowed the melding of experiences from related sectors such as legal, accounting, and consulting.

Finally, the government has invested in developing talent in maritime finance. Recognising the importance of ensuring there is an adequate pool of professionals to grow the industry, the government established the Busan International Training Institute to foster industry-academic partnerships between local universities and the MFC and to help develop Busan as a "mecca of maritime finance".

### The Way Ahead

Since the MFC's relocation to the BIFC in 2014, it has embarked on a US\$340-million ship financing to Greece's Oceanbulk Container, which ordered eight container ships from Korean shipbuilder Hyundai Heavy Industries. With continued efforts from and partnerships between the Korean government and the MFC, Busan is expected to surpass its current status as a central hub for cargoes and ships and to transform into an internationally recognised maritime financial hub.

## REFLECTION

"I am currently a double major student in Finance (International Trading) and Operations Management. This trip to Korea was extremely fruitful as I was able to experience first-hand different aspects of the maritime business in a real-world corporate setting, and to understand how shipping affects trade. It was exciting to have an out-of-the-classroom learning experience of Korea's port and maritime operations, to engage with corporate leaders, and to immerse myself in the ever-changing dynamics of Korea's trading landscape. To that end, I am thankful for the many opportunities that the International Trading Institute provided for us students, and I look forward to emerging from this experience more appreciative and knowledgeable of the maritime and trade industries."

– Tay Yang Juan

"Visiting the MFC and listening to its development plans made me understand the important role the financial sector plays in the development of the maritime sector. The MFC has developed significantly over the past few years in Busan, and it is an example of strong management. The presentation gave us a good understanding of the roles and functions of the MFC in Busan and helped link our textbook knowledge with what happens in practice."

– Saket Kumar Banka

#### Sources:

- Article: 'Marine Finance Center' Launched in Busan from the Marine Economy Korea, [http://www.industrykorea.net/BCS\\_Com/Project/Data/MEK/MEK-Marine\\_Finance.pdf](http://www.industrykorea.net/BCS_Com/Project/Data/MEK/MEK-Marine_Finance.pdf)
- Article: Marine Finance Center Sets Sail in Busan, <https://www.koreaexim.go.kr/site/program/board/basicboard/view?&boardtypeid=284&currentpage=3&menuid=016004007%2C016004007&pagesize=10&boardid=17010>
- 8th Annual Marine Money Korea Ship Finance Conference, <https://www.marinemoney.com/sites/all/themes/marinemoney/forums/KOR14/presentations/0940%20Mr%20Yong%20Beom%20Kim%20-%20English.pdf>
- EcoShip Fund, <http://sustainableinvestingchallenge.org/wp-content/uploads/2013/03/EcoShip-Fund-Prospectus.pdf>





## PUSAN NEWPORT INTERNATIONAL TERMINAL (PNIT)

## INTRODUCTION

The terminal aims to position itself as a trans-Pacific transshipment hub and to strengthen Busan's competence and position as the busiest container terminal in South Korea.

### Company Background

Pusan Newport International Terminal (PNIT) is a new port constructed to support the operations in Busan, South Korea. It is part of the Busan New Port, which had a total of 13.1 million twenty-foot equivalent units (TEUs) in 2015 and is expected to accommodate another 7.2 million TEUs by 2021. PNIT has a container capacity of over 2.2 million TEUs and is well able to handle hub and spoke as well as relay transshipment volumes for the trans-Pacific and Northeast Asian trade routes. The terminal aims to position itself as a trans-Pacific transshipment hub and to strengthen Busan's competence and position as the busiest container terminal in South Korea.

### Length of Existence and Ownership

PNIT is a joint venture between PSA International (PSA) (60%) and Hanjin Transportation Corporation (HJT) (40%), which successfully bid for it in August 2009. Terminal operations commenced in March 2010 with M/V APL SPINEL. With this, along with the Grand Alliance Inducement in 2012 and the 2M inducement in 2015, PNIT has now handled more than 10 million TEUs since its opening.

PNIT received the "Busan New Port Productivity Award" from Busan Port Authority in September 2014 and the "Emerging Terminal Award" at the Seatrade Asia Awards for the second year running in 2015.

The terminal currently has a maxed capacity of 2.6 million TEUs and an actual capacity of 2.2 million TEUs. It serves 2M (Maersk and MSC) and the G6 Alliance and is located along the trans-Pacific and Northeast Asian trade routes, which connect the Northeast Asian market to America. Its proximity to the Busan Industrial Area enables it to reduce the transportation time and cost for shippers, making it the convenient choice for shippers to ship their cargo. In addition, PNIT's connectivity to key industrial areas via highways enables cargo delivery to be both fast and reliable.

### Industry Characteristics

Monopolistic competition and Busan Port's competitors

The operators of Busan Port compete through the structure of a monopolistic competition. At the new-port side, PNIT handles 2.6 million TEUs. The port is also served by Pusan New Port Co. Ltd. (4.8 million TEUs), Hanjin New Container Terminal (2.6 million TEUs), Busan New Container Terminal (3 million TEUs), and PSA-Hyundai Pusan New Port Terminal (2.5 million TEUs). The old port side of Busan is mainly served by Hutchinson Busan Container Terminal (2.6 million TEUs), Dongbu Container Terminal (1.5 million TEUs), Busan International Terminal (1.8 million TEUs), and Korea Express Busan Container Terminal (2.7 million TEUs).



Balance of Power Between Competitors and Customers

It is interesting to note the relationship between shipping lines and the various operators in Busan Port. The old port of Busan mainly serves intra-Asia and feeder shipping lines such as DongShin, Namsung, Heung A, Wanhai Lines, KMTC, and CK lines. On the other hand, the new port of Busan serves a variety of international shipping lines targeted at international transshipment activities. Different alliances seem to congregate at various terminals, according to the following table:

TERMINAL	SHIPPING LINES CALLING
PNIT	G6 – Hapag-Lloyd, OOCL, NYK, APL, MOL, HMM, MSC, Maersk
PNC	2M – Maersk, MSC
HJNC	CKYHE – “K” Line, Yang Ming, Hanjin Shipping, COSCO, Evergreen
BNCT	O3 – CMACGM, UASC, CSCL
PHPNT	G6 – Hapag-Lloyd, OOCL, NYK, APL, MOL, HMM, MSC, Maersk

Hinterland and Trade Partners

The main trade partners of Busan are from China and Japan, with transshipment flows from the Europe-Fareast trade route.



As per the map above, the “Port Hinterland Road” is a 25-km road connecting the Busan New Port and the Busan North Port. The “Port Hinterland Road” runs through the Southport Bridge and the North Port Bridge, before reaching the Busan North Port, and runs through the Gwangan-Daero Bridge after the Busan North Port and connects to the Seoul-Busan Expressway. It is designed to run outside Busan City through the construction of bridges over seas to avoid traffic jams and air pollution.

There are also two other hinterland roads that start from the Busan New Port, which connects to the Seoul-Busan Expressway and Namhae Expressway.

Company Strategy

PNIT is located in the expanded New Port, which was built to handle large vessels. The expanded Pusan New Port is supported by the Busan Port Authority as it markets its position to shipping alliances and offers pricing incentive schemes to attract new businesses. Longer-term infrastructure investment determines the success of Busan’s growth strategy in the long run. The expanded New Port will serve as a global liner hub for the largest ships.

As the following table shows, PNIT is equipped with 11 quay cranes and a 1.2-km berth that is capable of handling a large variety of vessels, which include the Maersk Triple E class container ships. In addition, there are redevelopment plans to integrate the container-handling activities of the old North Port and New Port sites, which are set to be a multi-billion-dollar game changer for the Busan Port. Busan will also continue to do dredging to accommodate the largest vessels in the market, with the removal of the small Todo Island near the entrance of the port well under way.

Facilities

BERTH	Length	1.2 km
	Water depth	16 m
	Total area	840000 m2

Source: PNIT

Equipment:

Location	Equipment	Total
Berth	Quay crane	11
Yard	Rail mounted gantry crane	30
Mobile Equipment	Yard tractor	76
	Yard chassis	152
	Fork lift	7
	Reach stacker	3
	Empty handler	7

Source: PNIT

SWOT Analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"><li>• Geographical location (located on the main route)</li><li>• Cost competitiveness</li><li>• Sophisticated feeder network</li><li>• Excellent connectivity</li><li>• Significant market share of North China and Japanese transshipments</li></ul>	<ul style="list-style-type: none"><li>• No water connections to the hinterland</li><li>• Large movement between the sub-ports</li><li>• Strong reliance on foreign exports</li></ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"><li>• Strong growth rate of Northeast China’s containerised exports</li><li>• Increasing exports by Korean companies</li><li>• Development of tourism in Busan</li><li>• Development of Asia–Europe railway connection</li><li>• Consistent development of the North Port and the New Port</li><li>• Further weakening of the position of Japanese ports</li></ul>	<ul style="list-style-type: none"><li>• Increasing price competition from ports in Northeast and North China</li><li>• Growing strength of Chinese ports</li><li>• Increasing labour costs and difficulty in finding skilled labour in the region</li></ul>

## RECOMMENDATIONS

PNIT definitely holds much potential for the maritime and trade industries in South Korea. However, there are certain areas that can be worked on over time to strengthen the terminal's position as a transshipment hub. Its over-reliance on foreign exports renders PNIT vulnerable to external threats and the uncertainty of overseas markets. In times of global economic downturn or major political events, PNIT would be adversely affected and is more prone to making big losses. PNIT should come up with more attractive projects and packages for local companies and create long-term relationships with local companies instead.

On the issue of price competitiveness, more emphasis should be placed on increasing the quality and variety of services available at the port. High quality of service allows for more stable and long-term relationships among PNIT, partners, and companies.

## REFLECTIONS

"Our visit to PNIT gave us an insight into how PSA has collaborated with other players and expanded its international presence through a network of ports around the world. The visit also gave us a deeper insight into the importance of PNIT to the country."

– Naomi

"The visit to PNIT was an eye opener for all of us. Not only did we manage to have a deeper understanding of Busan's terminal performance, we were also able to gain first-hand experience of how terminals work. It was definitely enriching to see how various stakeholders – from port operators and ship stevedores to port technologies (e.g. RTG-RMG) – worked together in ensuring logistical efficiency. I would love to visit again."

– Lingli

"It was our first visit to a port in Busan, and PNIT did not disappoint. The speaker was enthusiastic and informative, telling us about the ports in Busan as well as the demands and challenges the ports faced. We were also treated to a bus tour through which we were able to have a better idea of how the terminal and its various stakeholders worked together to ensure an efficient system. It was truly an eye-opening experience."

– Jie Si

## BUSAN PORT AUTHORITY



INTRODUCTION

It also carries out a strategic mission of developing the City of Busan into a maritime transportation hub in Northeast Asia

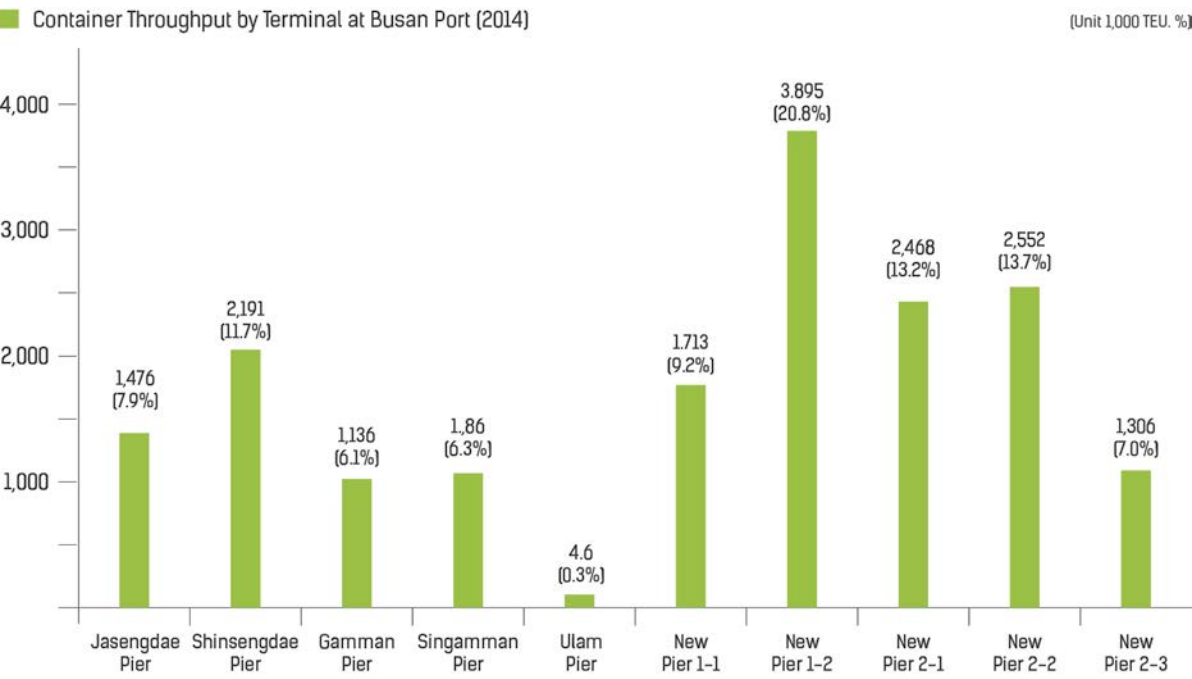
The Busan Port Authority (BPA) is a government agency in charge of coordinating and running the three major ports in Busan, namely the North Port, the Gemcheon Harbor, and the New Port. It also carries out a strategic mission of developing the City of Busan into a maritime transportation hub in Northeast Asia by first, establishing and running an international free trade zone in Busan and at the same time providing administrative support. Secondly, it selects and manages the most suitable operator for each port, and lastly, it develops a new site for port expansion, harmonising it with the overall city development of Busan.

The BPA was set up in 2004 to establish a general strategic direction that was in line with the overall maritime development strategy of South Korea and ultimately, its GDP growth.

Industry Characteristics

As mentioned earlier, the BPA as a government agency oversees and regulates the private operators at different port clusters, and majority of its business is in the import and export sectors and transhipment of containers. Busan accounts for almost 80% of the containerised trade in South Korea.

It seems that the BPA encourages competition among operators, which could be the reason why both the New Port and the North Port each have five terminals operated by different companies. This could bring about greater efficiency and thus attract vessels to call at Busan.



Market Structure Assessment: Perfectly Competitive

- Not only the market structure is competitive
- It is fiercely competitive between terminal operators for containers

North Porth & New Port

All Terminal Operators



Parties of Interest

CHAEBOLS	MAJOR FIRMS	COUNTRIES
CJ Group	Hutchison	Singapore
Hanjin	PSA	Korea
Hyundai	Dongbu Corp.	United Arab Emirates
Samsung	Imm Investment	
Daewoo	Sebang	
	Dongbu	
	KMTC	
	KCTC	

North Port

NORTH PORT - 5 TERMINALS
Jaseongdae Container Terminal (HKT)
Uam Container Terminal (UTC)
Singamman Container Terminal (DPCT)
Gamman Container Terminal (BIT)
Sinseondae Container Terminal (KBCT)

New Ports

- Phase 1 -2 Terminals
- Phase 2 - 3 Terminals
- All are in operation

BUSAN NEW PORT - 5 TERMINALS	PHASE
Pusan Newport International Terminal (PNIT)	Phase 1 - 1
Pusan Newport Company (PNC)	Phase 1 - 2
Hanjin Newport Company Terminal (HJNC)	Phase 2 - 1
Hyundai Pusan Newport Terminal (HPNT)	Phase 2 - 2
Busan Newport Container Terminal (BNCT)	Phase 2 - 3

Company Strategy

The BPA’s long-term strategy is to develop Busan as a global maritime hub with a wide range of integrated services.

Specialisation

The BPA is now at the stage of separating the functions of the North Port and the New Port and creating specialised roles for them.

For the North Port, the focus of the BPA is on ensuring a higher integration of the City of Busan by developing a wide range of services including passenger cruise, inland transportation and distribution, and maritime finance support service.

As for the New Port, its development will focus on the specialisation of containerised trade with the implementation of the Phase-3 of the port development.

Efficiency

The BPA is internationally renowned for its promotion of technology (automation) to increase the operating efficiency of its ports.

SWOT Analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"><li>• Being a government body, the BPA enhances the cooperation between the public and private sectors of the maritime industry.</li><li>• It also enjoys financial stability or, perhaps, strength, given its status as a state-owned enterprise as well as its strong alignment with the state policies of the Blue House.</li></ul>	<ul style="list-style-type: none"><li>• The realisation of many of its strategies was hampered by the prolonged decline in the global containerised trade and a slow recovery of the world economy.</li></ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"><li>• We observed greater potential in its development of a passenger cruise hub at the North Port. Given the global appeal of the Korean culture and the increased spending power of the middle class population of neighbouring China, the project will likely be a GDP growth driver for both Busan and South Korea.</li></ul>	<ul style="list-style-type: none"><li>• We believe the greatest threat in terms of competition in containerised trade would come from the emerging northeast region of China. Since the release of the Northeast China Revitalization Plan, the Chinese government has poured resources into the development of the maritime hub, and this may cause Busan to lose out.</li><li>• The rise of the Russian city Vladivostok as a major north Asian tourism hub will also likely bring challenges to the development of a cruise hub at the North Port.</li></ul>

Ulsan

Ulsan is South Korea’s seventh largest metropolis. Having the world’s largest shipyard and automobile assembly plant and second largest oil refinery, it is South Korea’s industrial powerhouse.

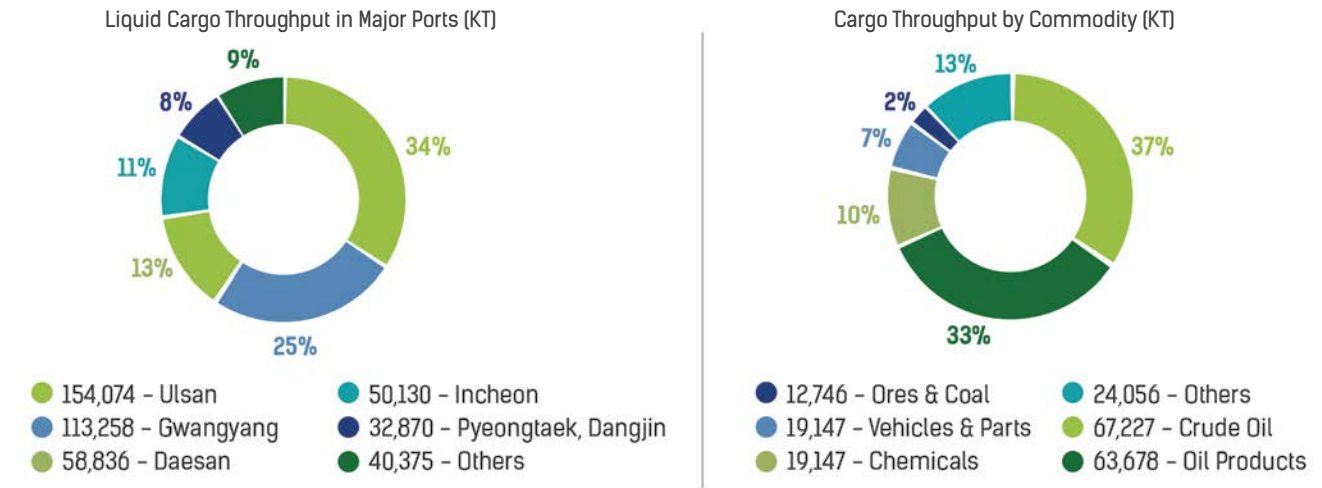
The UPA’s Responsibilities

The Ulsan Port Authority (UPA) was established in 2007 to manage the ports in Ulsan and develop its competitiveness as a shipping logistics hub.

The UPA mainly undertakes the following: development, management, and operation of port facilities; development, management, and operation of the logistics terminal and the hinterland; survey, research, and development of the Ulsan Port; human resources development; execution of supplementary businesses; and investment in and contribution to the Port of Ulsan.



The UPA manages and operates the Ulsan Main Port, Onsan Port, Mipo Port, and Ulsan New Port based on geographical location and function. The Port of Ulsan is South Korea’s largest industrial port located at the southeastern tip of the Korean Peninsula and is also the country’s top liquid cargo handling port (about 80% of cargo handled is liquid cargo). The Port of Ulsan is located on the main route of the world’s liquid cargo transportation, with large-scale liquid cargo storage facilities located in the hinterland.





## The UPA's Vision and Strategic Goal

The UPA developed a vision of “first-class liquid logistics hub port” to embody a first-class port providing top-tier, prime services by specialising in the logistics of liquid cargo, which is the Port of Ulsan’s major export and import item, together with oil and petrochemical resources and industrial goods. To realise the authority’s vision and mission, the UPA has set four strategic goals: to take off as a global port, to secure future growth engines, to achieve sustainability management, and to enhance corporate value.



Taking into account the UPA’s vision, industrial environment, and strategic goals, its management is continually making efforts to realise its goals, which include having 200 million tons of liquid cargo volume by 2020, building infrastructure equipped with 74 berths and 51 million b/l of storage tank, and achieving top-tier customer satisfaction in the port management and operation industry.

## MISSION

To foster the Port of Ulsan as a competitive logistics center and contribute to national economic development

## CORE VALUES

Creativity · Trust · Sustainability

## VISION

First-class liquid logistics hub port

## MANAGEMENT GOALS (2002)

Liquid cargo volume · 200 million tons  
Infrastructure · Berth (74), storage capacity (51 million b/l)  
Customer satisfaction · Top-tier public agency

## FOUR STRATEGIC GOALS

Taking off as a global port · Securing future growth engine  
Sustainability management · Enhancement of corporate value

## INDUSTRIAL ENVIRONMENT

Fostering Northeast Asia’s oil hub complex  
Building specialistic infrastructure by port  
Advancement of port logistics services  
Fortifying the competitiveness of port operation

Fully concentrating the UPA’s capabilities on the successful implementation of four major tasks



## REFLECTIONS

"I am Beng Lin, a third-year Business student in International Trading Concentration. I have a strong interest in energy trading, and ISM Korea was an eye-opening opportunity for me to learn more about the logistics and commodities sectors. During the trip, we had the opportunity to visit port authorities and even refineries to understand their business a little more. I was challenged by the high level of intellectual rigour, and appreciated the value chain better through conversations with like-minded professionals and schoolmates. I am looking forward to future ISM trips!"

– Ang Beng Lin

"I am Cheng Weng, a fourth-year Business student majoring in Finance (International Trading Track). My interest in the commodities sector, especially the oil & gas industry, started when I embarked on my internship with Total in the liquefied petroleum gas (LPG) desk. As I gained a greater understanding and appreciation of the cargo shipment of LPG, I wanted to experience first-hand the logistics behind ports and refineries. On our ISM trip to Ulsan, we were fortunate enough to visit the SK Energy refinery compound, where we got to see their crackers, blending compounds, and even discharging berths. Our interactions with delegates from the UPA also proved to be a huge lesson for me, as we were able to see the entire Ulsan port from their viewing gallery. We got to see the tugboats leading their very large crude carriers or VLCCs to their berths and the piping facilities that led to the crude and gas storages. Personally, it was a great eye-opening experience for me, and I thoroughly enjoyed embarking on this ISM with like-minded friends."

– Lye Cheng Weng

## BUSAN PORT AUTHORITY



SK innovation  
SK energy  
SK global chemical  
SK lubricants



# INTRODUCTION

SK Innovation Co Ltd, which owns SK Energy, covers all parts of the value chain of petroleum products, from the upstream exploration of crude oil to the refining of petroleum products.

## Company Background

SK Energy started out as Korea Oil Corp. in 1962 and was the first domestic oil refinery company in South Korea. SK Innovation Co Ltd, which owns SK Energy, covers all parts of the value chain of petroleum products, from the upstream exploration of crude oil to the refining of petroleum products. SK Innovation Co Ltd is also a large, profitable affiliate of SK, with a total asset of approximately US\$27 billion, a turnover of US\$41.2 billion, and a positive net income of US\$740 million in the financial year 2015.

## Length of Existence

The company has been in existence for the past 54 years.

## Ownership

It is currently owned by SK Innovation Co Ltd, which is listed on the Korea Stock Exchange (Ticker: 096770:KS) and whose aim is to make South Korea attain its dream of becoming self-sufficient in energy through oil development and to lead the development of future energy sources based on advanced environment-friendly technology to ensure a sustainable future.

## Company Characteristics

The company primarily operates in an oligopolistic market and therefore has a relatively large bargaining power over customers and suppliers. According to the Oil and Gas Journal, the refining capacity of South Korea is largely held by four companies, namely SK Energy, GS Caltex, S-Oil, and Hyundai Oilbank. Of these companies, SK Energy holds the largest market share at 40%<sup>1</sup>.

## Company Strategies

### Petroleum (SK Energy)

SK Innovation Co Ltd's petroleum arm, the number one oil refinery company in South Korea, focuses on expanding into overseas markets, particularly China and Southeast Asia. The petroleum unit has three different websites for different groups of customers: enclean.com provides membership services to customers using the fueling service at SK energy service stations, netruck.co.kr serves freight forwarders primarily, while e-SK.co.kr is mainly used by corporate clients.

<sup>1</sup> <http://www.ogj.com/articles/print/volume-108/issue-13/technology/south-korean-refiners.html>



The petroleum business posted revenues of KRW7.44 trillion and an operating profit of KRW705.2 billion in the second quarter of 2016 (2Q16), up by KRW214.7 billion from the first quarter of the same year (1Q16). The increase in operating profits was largely due to inventory-related gains from higher oil prices. With a storage capacity of 20 million barrels of crude oil in its storage tanks and a capacity to process 1.1 million barrels per day, SK mainly produces gasoline, diesel, LPG, jet fuel, and "Super Asphalt". These are strategic and key products that are essential to South Korea's economy. Excess petroleum products such as LPG and jet fuel are exported to other key Asian markets.

### Petrochemical (SK Global Chemical)

The petrochemical business posted revenues of KRW1.95 trillion and an operating profit of KRW302.7 billion in 2Q16, an increase of KRW78.4 billion from 1Q16. This came on the back of strong product spreads for ethylene and paraxylene. Going forward, SK Energy expects the paraxylene spread to remain at a strong level on the back of solid utilisation rates at purified terephthalic acid (PTA) facilities ahead of September's G20 summit in China.

SK Global Chemical also produces key olefins and aromatic products that are well in demand in key markets in the US.

### Lubricants (SK Lubricants)

The lubricants business posted revenues of KRW653.3 billion and an operating profit of KRW132.9 billion in 2Q16, an increase of KRW700 million from the previous quarter. The increase in operating profits can be largely attributed to strong global demand and inventory-related gains. Going forward, the company expects a stable market for lubricants due to a rising demand for premium base oil products.

Not only does SK Lubricants produce the high quality viscous base oil that is required for the production of lubricants, it is also able to use the base oil and combine it with its top-end research results to produce

two main lubricant products, branded as “Zic” and “Yubase”. These two products are only possible through the huge amount of resources that are spent on carrying out research and development in this area.

Exploration and Production

SK Energy’s exploration and production (E&P) business recorded revenues of KRW120.2 billion and an operating profit of KRW16.6 billion in 2Q16, down by KRW6.6 billion from 1Q16. Revenue was flat compared to 1Q16 due to the impact of higher oil prices being offset by a decline in sales volume and the drop in sales exchange rate. The company seeks to continually work toward building recognition value and influence in the global operations and maintenance (O&M) market by achieving both horizontal and vertical expansions.

SK Innovation Co Ltd Ulsan Refinery Facility

Given the wide range of refined clean and dirty petroleum products, refined chemicals such as olefins and aromatics, and not to mention key lubricants, it is important that the layout and facilities of the Ulsan refinery facility are adequate for the import of crude oil for processing and for facilities to export refined products. There are 22 ship piers as well as floating offshore buoys to carry out the movement of crude oil and petroleum products over a wide range of vessels, from the VLCCs to small- and medium-sized tankers.

Key storage tanks are also arranged in a manner that helps to improve efficiency when crude oil is processed at different stages. This helps to improve efficiency within the refinery facility, which we think will hit past its current run rate of 1.1 million barrels per day in the long run. The structure and facilities of Ulsan Refinery facility is a testament to how planning and allocation of key infrastructure such as refinery facilities, ports, and storage tanks can help boost its status as one of the major refinery hubs in the world.

Technology Adoption

With increasing competition globally, technology adoption plays a significant role in maintaining SK Energy’s lead in the refinery industry. An example of how the company has adopted technology is GreenPol, which turns carbon dioxide into synthetic resin products<sup>2</sup>.

SWOT Analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"><li>• Industry-leading position</li><li>• Strengths in R&amp;D</li><li>• Committed management</li></ul>	<ul style="list-style-type: none"><li>• Overexposed to one single industry (i.e. refinery)</li></ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"><li>• Commercialisation of R&amp;D efforts</li><li>• Strategically located next to China, a big consumer of crude and related products</li></ul>	<ul style="list-style-type: none"><li>• Fall in global demand due to a recession</li><li>• Slowing down of China</li></ul>

RECOMMENDATION

Our visit to SK Energy’s Ulsan complex has allowed us to better understand SK Energy’s operations. We were particularly impressed by the company’s forward thinking (At the time of our visit, there were additional plants being constructed in anticipation of increased demand), as well as the efficiency of its operations. However, we feel that SK Energy could do more to diversify away from its heavy reliance on the petrochemical industry. In particular, its strong R&D team can be tapped to create products that could prove to be important in the future. The GreenPol technology is an excellent example of how the company has used its strengths in R&D to create something that is environmentally friendly.

GROUP REFLECTION

In an increasingly globalised world, companies are becoming more competitive. Developing new products and coming up with new processes are some ways companies employ to ensure they stay ahead of the game. SK Energy, being the largest crude refiner in South Korea, should take advantage of its size and anticipate future trends. By thinking ahead, the company will likely continue to outperform its rivals and remain as the top refiner in South Korea.



<sup>2</sup> <http://pulsenews.co.kr/view.php?year=2012&no=363566>





## ULSAN NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY (UNIST)

### INTRODUCTION

Situated in the eastern coastal city of Ulsan, UNIST aims to become one of the world's leading science and technology universities. Despite being only recently established, UNIST is one of the top three universities in the area of secondary battery technology, along with Stanford University and Massachusetts Institute of Technology (MIT). The school boasts world-class facilities for research and development and is the first in the country to open these facilities to selected undergraduate students.

#### Characteristics

##### Graduate School of Interdisciplinary Management (GSIM)

Apart from its diverse undergraduate programmes, UNIST prides itself on its accomplished graduate programmes to enhance the professional and work skills of its graduate students. Lecturers with many years of experience in their fields are invited to guide the students.

These lecturers are industry experts who are working at top Korean companies such as Hyundai Heavy Industries, Hyundai Automobile, SK, and S-Oil. The school has established close relationships with these companies, and students can benefit from these by going through their well-planned internships.

#### Specialisation

##### Energy Commodity Trading & Financial Engineering (ECTFE)

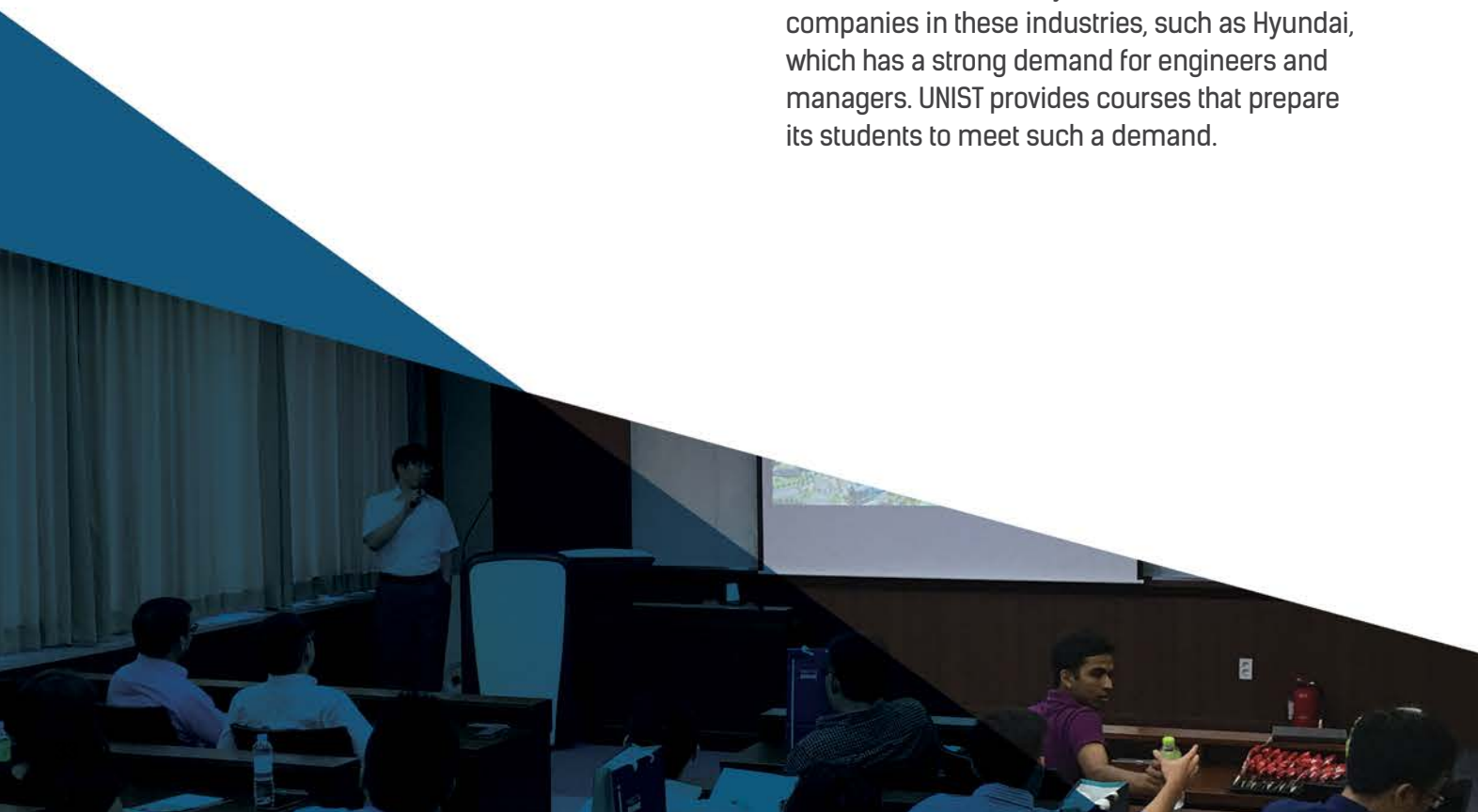
The ECTFE graduate programme is Korea's first certified Professional Science Master's (PSM) programme. It has a special interdisciplinary pedagogy focused on energy supply chain and financial engineering skills. By engaging experienced full-time faculty members—ranging from traders, quants, risk managers, and fund managers—the institute aims to support its students to become professional global traders.

The institute has also inked partnerships with the Korea National Oil Corporation (KNOC) and SK Energy, and is responsible for leading the "Northeast Asia Oil Hub" project with the Ministry of Trade, Industry and Energy (MOTIE), KNOC, and Ulsan City. Taught in a regional oil hub, the programme has developed synergy with prominent industries in the city and has the potential to raise the next generation of traders who will bring the oil hub and its stakeholders to greater heights.



## GROUP REFLECTION

Visiting UNIST gave us deep insights into the current developments in South Korea. Many of the programmes that UNIST offers respond to the needs of industries—of which automobile, shipbuilding, and refinery rank among the biggest in South Korea. The school provides courses that are closely tied to the needs of the companies in these industries, such as Hyundai, which has a strong demand for engineers and managers. UNIST provides courses that prepare its students to meet such a demand.







Administration Building, Level 5, 81 Victoria Street Singapore 188065

@ [mec@smu.edu.sg](mailto:mec@smu.edu.sg) ☎ +65 6808 5139